

10.0 BUFFERS

10.1 Introduction

This section describes the proposed natural resource buffers and clearing guidelines for the NECEC Project. Visual buffers are addressed in **Section 6**, Visual Quality, of this Site Law application. The use of vegetative buffers and mitigative construction techniques will minimize the potential for soil erosion and sedimentation into waterbodies and wetlands, minimize water temperature increase due to insolation, and protect riparian and other significant habitat values.

All NECEC Project transmission line corridors will be continuously vegetated with herbaceous plants and shrubs, but restrictions on clearing and maintenance within and immediately adjacent to protected and sensitive resources will allow a greater density of non-capable vegetation to remain. CMP will avoid disturbance of vegetation within these areas to the greatest extent practicable. Buffers bordering streams and rivers will be protected and maintained by selective clearing during construction and reduced cutting of vegetation during transmission line maintenance. All tree species capable of growing into the conductor safety zone must be removed from the buffers during construction, and prevented from re-establishing during periodic scheduled vegetation maintenance operations. These species are known as “capable species” and include, but are not limited to, fir, spruce, oaks, pines, maples, birches, poplar, elm, beech, and basswood.

Selective transmission line corridor management techniques are discussed below, and have also been incorporated into the NECEC Construction Vegetation Clearing Plan (**Exhibit 10-1**) and CMP’s Post-Construction Vegetation Management Plan (**Exhibit 10-2**).

Maps depicting the locations of all streams and rivers and other sensitive natural resources are provided in **Attachment 2** of the Site Law Application. These streams and rivers are also referenced in Section 7 – Wildlife and Fisheries.

10.2 Objectives

The objective of managing vegetative buffers is to maintain ecological values of resources without sacrificing the operational safety of the electric transmission line and associated conductors. Riparian vegetative buffers provide ecological benefits such as riparian habitat value and soil stabilization, and help protect aquatic habitat from the effects of insolation (the warming effect of sunlight). Maintaining buffers can also prevent indirect impacts to adjacent waterbodies and wetlands. Mechanized equipment will be used during the initial clearing effort to

prepare the corridor for construction. However, mechanized clearing is generally unnecessary during periodic corridor maintenance.

10.3 Buffer and Resource Protection Concepts

Paragraph text begins here Buffers and other construction mitigation measures are typically designed to provide one or more of the following functions:

- a. Prevent soil erosion and sedimentation of surface waters;
- b. Slow the velocity, increase the infiltration, and otherwise remove sediment and other contaminants in runoff before it enters surface waters;
- c. Reduce access of all-terrain vehicles to streams;
- d. Provide shade, to reduce the warming effect of sunlight (insolation) on water; and
- e. Provide cover and habitat for wildlife that use riparian and significant habitats.

Critical factors considered during while determining NECEC clearing and construction mitigation measures included:

- a. CMP has a responsibility to provide reliable electric service, in accordance with mandatory reliability and safety standards;
- b. CMP has a responsibility to avoid and minimize impacts to protected natural resources;
- c. The vegetation clearing and management plans must be feasible. Specifically, CMP must have the ability to safely and successfully implement and comply with vegetation clearing and maintenance requirements;
- d. CMP will utilize the accepted transmission line construction and maintenance practices as conducted throughout the industry;
- e. Recommendations and performance standards for work in sensitive habitats received from regulatory agencies; and
- f. The need for flexibility in determining how a cleared area can best be revegetated.¹²

¹² CMP's experience with respect to transmission line corridor vegetation management in Maine is that natural regeneration provides the best long-term protection for ROW habitat. As such, CMP does not propose the planting of nursery stock as a routine practice. In remote locations, as commonly found on transmission ROWs, the survival rate for planted nursery stock is very low. Nursery stock is generally grown with irrigation and fertilizer, and without weed competition. These conditions are very different from the conditions encountered on a ROW. Plantings therefore require significant ongoing maintenance to achieve even a marginal success rate. This maintenance could include fertilizing, watering, mulching, and other activities, all at locations that may be several miles from the nearest road and therefore difficult to access. The cost of initial planting and ongoing maintenance, combined with follow-up replacement plantings, makes planting with nursery stock neither effective nor cost-effective. Moreover, even with this specialized care, the long-term survival rate will not

These factors were taken into consideration in preparing the NECEC Construction Vegetation Clearing Plan and CMP's Post Construction Vegetation Management Plans, which includes strict performance standards applicable to the use of mechanized equipment and initial vegetation control practices to prepare the corridor for construction activities and for long-term use of a transmission corridor maintained in an early successional habitat condition. The buffer maintenance practices identified in the Construction Vegetation Clearing Plan comply with State of Maine regulations and are consistent with industry standards for maintaining and protecting streams, buffers, and significant habitats. This plan combines the best features of successful, existing practices that are feasible to implement in the field. The Construction Vegetation Clearing Plan for the NECEC is provided in **Exhibit 10-1**.

Following construction of the NECEC Project transmission line facilities, CMP will implement vegetation maintenance on a 4-year cycle to maintain the integrity and functionality of the transmission lines, maintain access for maintenance or emergency repairs, and facilitate safety inspections. Post-construction vegetation maintenance is performed using hand-cutting and herbicide application techniques and does not typically require mechanized equipment. Follow-up maintenance activities during operation of the transmission lines require the removal of capable species, dead trees, and "hazard trees". Post-construction vegetation maintenance is less extensive than the initial clearing associated with transmission line construction. As a result, CMP has developed a Post-Construction Vegetation Management Plan for the NECEC as provided in **Exhibit 10-2**.

compete successfully with the local grasses, broad leaf weeds, and scrub species that will take over the ROW. This has repeatedly been demonstrated in areas where CMP has recently installed supplemental nursery plantings.

Exhibit 10-1: NECEC Construction Vegetation Clearing Plan

Exhibit 10-1

New England Clean Energy Connect Plan for Protection of Sensitive Natural Resources During Initial Vegetation Clearing

Prepared by:

**Central Maine Power Company
83 Edison Drive
Augusta, Maine 04336**

September 2017



Introduction

This Construction Vegetation Clearing Plan (VCP) applies to construction of transmission lines associated with Central Maine Power Company's (CMP) New England Clean Energy Connect (NECEC) project. The VCP describes the restrictive management practices required for protected natural resources during vegetation clearing associated with NECEC project construction. The requirements described in this VCP apply to planned construction and are not intended to apply to planned or emergency maintenance, and/or repair actions.

The goal of the VCP is to provide construction personnel with a cohesive set of vegetation management specifications and performance standards for work within and adjacent to protected natural resources during transmission line construction.

The protected natural resources subject to restrictive vegetation management requirements include:

- Wetlands and streams;
- Perennial streams within designated Atlantic salmon (*Salmo salar*) habitat;
- Significant Vernal Pools (SVP);
- Inland Waterfowl and Wading Bird Habitat (IWWH);
- Deer Wintering Areas (DWA);
- Rare plant locations; and
- Locations over mapped significant sand and gravel aquifers.

In locations where individual restrictions or procedures overlap or multiple restrictions apply, the more stringent restrictions and all applicable procedures will be followed by construction personnel.

1.0 Right-of-Way Vegetation Management Procedures

1.1 Arboricultural Management Practices

Capable vegetation will be removed and controlled within the footprint of the NECEC development, including within the transmission line corridors. Capable vegetation is defined as woody plant species and individual specimens that are capable of growing to a height that would reach the conductor safety zone as illustrated in Figure 1A attached to this exhibit. Removal of capable species beneath the conductors within transmission line corridors is intended to meet the following goals:

- Facilitate construction;

- Maintain the integrity and functionality of the line;
- Facilitate the safe operation of the line;
- Maintain access in case of emergency repairs; and
- Facilitate safety inspections.

Therefore, the objective of this VCP will be to remove woody vegetation capable of encroaching into the Minimum Vegetation Clearance Distance (MVCD) of the new transmission lines to facilitate construction and maintain the integrity and safe operation of the transmission line consistent with the standards of North American Electric Reliability Corporation's (NERC) Transmission Vegetation Management¹. This will be accomplished by practicing an integrated vegetation management strategy using a combination of mechanical cutting, hand-cutting, and selective herbicide applications. Mechanical mowing may be used along access roads or in unusual circumstances, should the typical procedures not suffice.

Throughout clearing and construction, shrub and herbaceous vegetation will remain in place to the extent practicable. Capable vegetation, dead trees, "hazard trees" and all vegetation over 10 feet in height will be removed during initial transmission line corridor clearing prior to construction of the new transmission lines. Due to the sag of the electric transmission lines between the poles, which varies with topography, the distance between poles, tension on the wire, electrical load, air temperature and other variables, the required clearance is typically achieved by removing all capable species. Hazard trees are those trees typically on the edge of the transmission line corridor that pose an imminent threat of violating the minimum separation standard or are at risk of contacting the lines themselves due to disease, configuration or potential instability. Hazard trees are typically removed immediately upon identification.

The following procedures will be implemented during vegetation management activities to protect sensitive natural resources:

- a. Protected natural resources and their associated buffers will be flagged or located with a Global Positioning System (GPS) prior to all construction and clearing activities;
- b. When and if terrain conditions permit (e.g., certain ravines and narrow valleys) capable vegetation will be permitted to grow within and adjacent to protected natural resources or critical habitats where maximum growing height can be expected to remain below the conductor safety zone. Narrow valleys are those that are spanned by a single section of transmission line, pole-to-pole.
- c. Mechanical cutting will be the preferred method of vegetation clearing within protected natural resource buffers and sensitive areas, where reasonable and practicable and with the appropriate protective measures (e.g., construction matting and reach-in techniques);

¹ North American Electric Reliability Corporation Transmission Vegetation Management, Standard FAC 003 – 3 Technical Reference, July 1, 2014.

- d. Equipment access through wetlands or over streams will be avoided as much as practicable by utilizing existing public or private access roads, with landowner approval where required;
- e. Equipment access in upland areas with saturated soils will be minimized to the extent practicable to avoid excessive rutting or other ground disturbance;
- f. Significant damage to wetland or stream bank vegetation, if any, will be repaired following completion of clearing activities in the area;
- g. Areas of significant soil disturbance will be stabilized and reseeded following completion of clearing activities in the area.
- h. When capable vegetation within and adjacent to a protected natural resource or identified critical habitat will be removed for the purpose of constructing the development, the natural regeneration of non-capable woody vegetation will be allowed within all protected resources. At a minimum, the natural regeneration of non-capable woody vegetation will be allowed. To facilitate the regeneration of natural vegetation within and adjacent to (generally, within 75 feet of) protected natural resources and special habitats, the contractor will separate the topsoil from the mineral soil when excavating during project construction. The excavated topsoil will be returned to its original place and position in the landscape and appropriate erosion control methods will be utilized.
- i. Locations within the NECEC that contain invasive plant species, as identified in Table 1 below, will be identified prior to the start of construction of the project or the start of construction on any individual segment of the project at the discretion of CMP or its contractor. Central Maine Power Company shall develop an invasive species vegetation monitoring plan and submit it to the Department for review and approval prior to the start of construction on the project. This plan will have a stated objective of preventing the introduction and spread of invasive species as a result of construction. Herbicide application is an acceptable method of controlling invasive growth, when hand removal or other non-chemical methods will not be effective, including in protected natural resources and other sensitive areas.

Table 1 – Invasive Plant Species¹

Species	Common Name
1. Acer platanoides	Norway maple
2. Alliara petiolata	Garlic mustard
3. Berberis thunbergii	Japanese barberry
4. Celastrus orbiculatus	Oriental bittersweet
5. Cynanchum louiseae	Black swallowwort
6. Elaeagnus umbellata	autumn olive
7. Fallopia japonica	Japanese knotweed
8. Frangula alnus	glossy buckthorn

9. <i>Lonicera morrowii</i>	Morrow's honeysuckle
10. <i>Lonicera tatarica</i>	tatarian honeysuckle
11. <i>Lythrum salicaria</i>	purple loosestrife
12. <i>Phragmites australis</i>	common reed
13. <i>Rhamnus cathartica</i>	common buckthorn
14. <i>Rosa multiflora</i>	multiflora rose

1-MNAP's list of "Currently considered invasive in Maine" excluding aquatic plant species.

2.0 Vegetation Management Methods – All Transmission Line Corridor Areas

2.1 Mechanical Methods

During construction, vegetative clearing of capable species will be completed primarily with mechanical equipment, including motorized equipment. All capable species and any dead or hazard trees will be cut at ground level except in designated buffer zones, as described below. Large vegetation cut during construction will be handled in accordance with the Maine Slash Law².

Access roads and travel lanes will be located to protect sensitive and protected natural resources to the maximum extent practicable and construction matting will be used in accordance with CMP's environmental guidelines and per the timber mat performance standards provided below.

Timber mats or matting used for construction:

- shall not be made from wood from ash trees (*Fraxinus* sp);
- unfinished timbers used in the construction of the mats must be free of bark unless produced by a firm certified by the Maine Forest Service (MFS) for production of mats with incidental bark for this project. Such mats must be marked as outlined in the supplier's agreement. Applicant shall maintain a copy of the MFS compliance agreement including a representation of the accepted mark in the records;
- before entering the State of Maine shall be cleaned of soil and vegetative material by pressure washing;
- shall not have been used in, or made from lumber from, Federally Quarantined areas as set out in 7 CFR 301 unless accompanied by the appropriate USDA certificate of treatment required for interstate transport. Said certificates will be maintained in a central filing location available for review by appropriate Agency personnel for a period of three (3) years after project completion, as

2 12 MRSA §9331 et. Seq.

determined by CMP; and,

- must have shipping information sufficient to identify the shipper and number and shipping origin of the mats.

The Maine Forest Service and U. S. Department of Agriculture reserve the right to inspect mats and matting material for compliance with these standards.

2.2 Herbicide Application

Herbicide applications will likely begin after clearing is completed to gain control of vegetation growth. When control is achieved, treatment will typically occur as part of scheduled maintenance on a 4-year cycle or as needed. By using selective herbicides and a variety of application methods, vegetation along the transmission line corridor will eventually consist of a dense, low-growing plant community that will discourage the establishment of capable tree species. Therefore, fewer capable woody species and specimens will require treatment in future applications.

The following procedures will be implemented during herbicide applications:

- a. Herbicides will be used in strict accordance with the manufacturer's EPA-approved labeling and will not be applied directly to waterbodies or areas where surface water is present;
- b. Foliar herbicides will not be applied within 25 feet of rivers, streams, brooks, lakes, ponds, or wetlands that have water present at the surface at the time of the application;
- c. Herbicides will not be applied to stumps (cut stump treatment) within areas of standing water.
- d. Herbicides will not be mixed, transferred or stored within 100 feet of any wetland or surface water. On public access roads, herbicide mixing, transfer or storage may be done within 100 feet of wetlands or surface waters;
- e. Herbicides will not be mixed, transferred or stored within 100 feet of Significant Vernal Pool depressions. On public access roads, herbicide mixing, transfer or storage may be done within 100 feet of Significant Vernal Pool depressions;
- f. Unless performed on public access roads, herbicides will not be mixed, transferred or stored over mapped significant sand and gravel aquifers;
- g. Herbicides will not be applied, mixed, transferred or stored within 100 feet of any known private well or spring or within 200 feet of any known public water supply well. On public access roads, herbicide mixing, transfer or storage may be done within 200 feet of known public water supply wells;
- h. When herbicide applications are performed in wetlands without standing water, only herbicides approved for use in wetland environments will be used;

- i. Herbicides will not be applied to any area when it is raining or when wind speed exceeds 15 miles per hour as measured on-site at the time of application. When wind speeds are below 3 miles per hour, applicators should be aware whether a temperature inversion is present, and should consult the herbicide label to determine whether application should proceed under these conditions;
- j. The foreman or licensed applicator on each herbicide application crew will be licensed by the Maine BPC and will remain in eye contact and within earshot of all persons on his/her crew applying herbicides. At least one individual from any company applying herbicides will also hold a Commercial Master Applicator License issued by the BPC. This Master Applicator must have the ability to be on-site to assist persons applying herbicides within six hours driving time. If an out-of-state company is conducting the herbicide application, the company will have a Master Applicator in Maine during any application. Application of herbicides will be in accordance with applicable regulations promulgated under the Maine Pesticides Control Act, including those regulations to minimize drift, to maintain setbacks from sensitive areas during application, and to maintain setbacks from surface waters during the storing/mixing/loading of herbicides; and
- k. Herbicides will typically be mixed in a truck-mounted tank that remains on public access roads. Herbicide application is done by personnel with low-volume, hand-pressurized (manual) backpacks with appropriate nozzles, to minimize drift, who travel along the transmission line corridor by foot or by all-terrain vehicle and spot-treat target species and specimens.

The location of all streams, wetlands, significant vernal pools, rare plant locations, known wells, and mapped significant sand and gravel aquifers crossed by the transmission line corridor will be provided to construction personnel.

2.3 Spill Management

Any spill or release of petroleum products or other hazardous material within the transmission line corridor during construction will be managed in accordance with CMP's Environmental Control Requirements (see **Exhibit 15-1**) and will include the following setbacks unless CMP can demonstrate that, due to special circumstances at specified locations, these setbacks are impractical at those locations.

- (a) No fuel storage, vehicle/equipment parking and maintenance, and refueling activity may occur within 100 feet of a protected wetland or other waterbody, unless no practicable alternative

exists and secondary containment with 110% capacity is provided for any fuel storage containers or tanks.

(b) No fuel storage, vehicle/equipment parking and maintenance, and refueling activity may occur within 200 feet of a private water supply.

(c) No fuel storage, vehicle/equipment parking and maintenance, and refueling activity may occur within 400 feet of a public water supply.

(d) No fuel storage, vehicle/equipment parking and maintenance and refueling activity may occur within 25 feet minimum of the following:

(i) An area listed in Maine's biological conservation data system, Biotics, of the Maine Natural Areas Program, including rare natural communities and ecosystems (state rarity rank of S1 through S3 and habitats supporting Endangered or Threatened plant species). Boundaries and locations are as determined by the Maine Natural Areas Program of the Department of Agriculture, Conservation and Forestry.

(ii) Habitat of any species declared rare, threatened or endangered by the Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources, or the Director of the U.S. Fish and Wildlife Service.

3.0 Vegetation Management within Freshwater Wetlands

Transmission line corridor wetlands range in type from small, emergent wetlands formed in ruts from logging equipment to large forested wetland systems.

3.1 Vegetation Clearing Restrictions within and Adjacent to Freshwater Wetlands

The following restrictions apply to vegetation clearing within freshwater wetlands and their buffers:

- a. Unless frozen, heavy equipment travel in wetlands will be performed on construction matting, or other approved alternative protective measures will be implemented.
- b. If initial clearing or other construction activities result in areas of bare soil or minimally vegetated cover, the areas of bare soil will be allowed to revegetate naturally, where practicable. If areas are sufficiently large to warrant planting, a native seed designed to provide short term cover will be applied, and the area will be allowed to return to non-capable native woody and perennial herbaceous vegetation naturally.
- c. No accumulation of slash will be left within wetlands.

4.0 Vegetation Clearing within Stream Buffers

A 25-foot buffer, as measured from the top of each bank, will be established for vegetation removal along streams within the transmission line corridor. Additional restrictions will be applied within 100 feet of streams. Buffer widths may be reduced if the applicant demonstrates that functions and values of the stream buffer will not be impacted by the removal of vegetation.

This section describes the restrictions related to vegetation removal that will apply within these stream buffers. All vegetation clearing procedures and restrictions that apply to vegetation management for transmission line corridor construction also apply within the stream buffers.

4.1 Additional Vegetation Clearing Restrictions within Stream Buffers

The following additional restrictions apply to vegetation clearing within stream buffers:

- a. All stream crossings by heavy equipment will be performed through the installation of equipment spans with no in-stream disturbances. Streams will not be forded by heavy equipment.
- b. Within that portion of the 25-foot stream buffer that is within the wire zone (i.e., within 15 feet, horizontally, of any conductor; (see Figure 1), all woody vegetation over 10 feet in height, whether capable or non-capable, will be cut back to ground level and resulting slash will be managed in accordance with Maine Slash Law. No other vegetation, other than dead or hazard trees, will be removed;
- c. Removal of capable species, dead or hazard trees within the 25-foot buffer will typically be accomplished by hand-cutting. Use of mechanized harvesting equipment is allowed if supported by construction matting or during frozen conditions in a manner (i.e., use of travel lanes and reach-in techniques) that preserves non-capable vegetation less than 10 feet in height to the greatest extent practicable;
- d. No accumulation of slash will be left within any stream or stream buffer.

Allowing non-capable vegetation less than 10 feet in height to remain within the 25-foot stream buffer will provide shading and reduce the warming effect of direct sunlight (insolation). Low ground cover vegetation will also remain to filter any sediment in surface runoff. These restrictions will allow the stream buffers to provide functions and values similar to those provided prior to transmission line construction.

5.0 Vegetation Clearing within Significant Vernal Pool Habitat (SVPH)

Vegetated buffers of 250 feet, as measured from the edge of the pool depression, will be established for SVPHs crossed by the transmission line corridor. The SVPH depression and buffer area together comprise the SVPH. Vegetation clearing within the SVPH will be subject to the same procedures and

prohibitions, as applicable, which are required in the typical transmission line corridor, as well as to the additional measures below.

5.1 Additional Vegetation Management Restrictions within SPVH

The following additional restrictions apply to vegetation clearing within SVPH:

- a. Mechanized equipment will not be allowed within the vernal pool depression, unless the depression encompasses the entire width of the transmission line corridor. Mechanized equipment will only be allowed to cross the vernal pool depressions during frozen or dry conditions or with the use of mats;
- b. Initial clearing within a SVPH will occur during frozen ground conditions. If not practicable, hand cutting or reach in techniques will be used. If that is not adequate, travel lanes to accommodate mechanical equipment in the 250-foot buffer may be used with approval of the MDEP.
- c. Between April 1 and June 30, no vegetation removal using tracked or wheeled equipment will be performed within the 250-foot SVPH buffer;
- d. No refueling or maintenance of equipment, including chain saws, will occur within 250 feet of SVP depressions, unless done so on a public access road;
- e. No herbicide use is permitted within 25 feet of the SVP pool depression; and
- f. No accumulation of slash shall be left within 50 feet of the edge of the SVP depression and slash piles will not exceed 18 inches tall.

6.0 Vegetation Clearing within Moderate or High Value Inland Waterfowl and Wading Bird Habitat

Inland Waterfowl and Wading Bird Habitats (IWWH) are habitats mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) that contain an inland wetland complex used by waterfowl and wading birds, plus a 250-foot nesting habitat area surrounding the wetland. The nesting habitat is considered to be part of the mapped IWWH. No additional buffers are proposed for IWWHs beyond this mapped habitat, and as such the vegetation maintenance restrictions apply to the mapped habitat only.

Vegetation clearing within the IWWH will be subject to the same procedures and prohibitions, as applicable, which are required in the typical transmission line corridor and for stream buffers.

6.1 Additional Vegetation Clearing Restrictions within Inland Waterfowl and Wading Bird Habitat

The following additional restrictions apply to vegetation clearing within mapped IWWH:

- a. If practicable, vegetation clearing will take place during frozen ground conditions. If not practicable, vegetation within IWWH will be removed using hand cutting or reach-in techniques and appropriate techniques to minimize disturbance to the maximum extent practicable, such as the use of travel lanes to accommodate mechanical equipment use in the IWWH.
- b. Between April 15 and July 15, use of motorized vehicles (e.g., all-terrain vehicles) and mechanized equipment (e.g., chain saws or brush cutters) within IWWH is prohibited. Use of non-mechanized hand tools is allowed during this time period;
- c. No refueling or maintenance of equipment, including chain saws, will occur within the IWWH, unless done so on a public access road; and
- d. No herbicide use is permitted within 25 feet of any wetland within the mapped IWWH.
- e. Where overhead transmission lines cross an IWWH area, CMP will install bird diverters or aviation marker balls according to the manufacturer's guidelines and applicable transmission line codes unless otherwise determined to be impracticable by the Maine Department of Environmental Protection (MDEP) in consultation with MDIFW.
- f. Provided they do not present a safety hazard and are naturally present, CMP will leave undisturbed a minimum of 2-3 snags per acre to provide nesting habitat for waterfowl. Where appropriate, to mitigate habitat impacts due to the development, and as approved by the MDEP, capable species will be topped, girdled, and/or treated with herbicides to prevent re-growth to create snags. Snags will be 12-16 inch in diameter or the largest size available from the existing stand of vegetation.
- g. No accumulation of slash will be left within 250 feet of the edge of the IWWH, and slash piles will not exceed 18 inches tall.
- h. Impacts to scrub-shrub and herbaceous vegetation in and within 250 of IWWH will be minimized to the maximum extent practicable.

7.0 Vegetation Clearing within Mapped Deer Wintering Areas

Deer Wintering Areas (DWA) provide important refuge for white-tailed deer (*Odocoileus virginianus*) during the winter months in northern climates and are typically characterized by an extensive stand of mature softwood species with a dense forest canopy.

During construction, impacts to scrub-shrub and herbaceous vegetation and other non-capable species will be minimized to the maximum extent practicable. No additional vegetation clearing restrictions are proposed within mapped DWAs, as all capable species will be removed from these and other areas within the transmission line corridor in order to comply with NERC Transmission Vegetation Management standards.

8.0 Vegetation Clearing within Rare Plant Locations

Vegetation clearing of the transmission line corridor has the potential to impact rare plants and/or alter their habitat. The following additional vegetative clearing restrictions will minimize impacts to rare plants. The additional restrictions will apply only to the demarcated locations of the identified rare plants. No additional buffers will be established surrounding rare plant locations. These restrictions are intended to maintain existing hydrology and limit soil disturbance within rare plant locations.

8.1 Additional Vegetation Clearing Restrictions within Rare Plant Locations

The following additional restrictions will apply to vegetation clearing for rare plant species in the identified location:

- a. Unless rare plant locations encompass the entire width of the transmission line corridor, mechanized equipment will only be allowed to cross rare plant locations during frozen conditions, on established travel paths/crossings, or with the use of mats.
- b. Initial clearing within rare plant communities will be undertaken during frozen ground conditions whenever practicable, and if not practicable selective mat placement and reach-in techniques will be used to minimize disturbance to the rare plant communities to the maximum extent practicable.
- c. If initial clearing or other construction activities result in areas of bare soil or minimally vegetated cover, where practicable, these areas will be allowed to revegetate naturally. If areas are sufficiently large to warrant planting, a native seed mix designed to provide short term cover will be applied and the area will be allowed to return to native woody and perennial herbaceous vegetation naturally.
- d. Heavy equipment travel within rare plant communities will be minimized to the maximum extent practicable. Hand cutting or “reach-in” techniques to cut and remove capable tree species and vegetation over 10 feet tall within the wire zone, or other techniques as agreed upon in consultation with the MDEP and Maine Natural Areas Program (MNAP), will be used. When equipment access is necessary, activity will be restricted to a few narrow travel lanes that have been clearly marked prior to clearing activity.
- e. No refueling or maintenance of equipment, including chain saws, will occur within demarcated rare plant locations, unless done on a public access road.
- f. No foliar herbicide use is permitted within the demarcated rare plant locations, however cut surface herbicides may be used on capable species and specimens.

9.0 Vegetation Clearing Procedures over Mapped Significant Sand and Gravel Aquifers

Transmission lines located over mapped significant sand and gravel aquifers are subject to the typical transmission line corridor clearing procedures, except that no refueling or maintenance of equipment, and no herbicides may be mixed, transferred or stored, over the mapped significant sand and gravel aquifers, unless done so on a public access road.

10.0 Locating and Marking Buffers and Habitats

A database will be maintained, including maps and GIS shapefiles, of the buffers, restricted habitats, and sensitive areas and their locations relative to the nearest structure (pole) or road location. The distance and direction from the nearest structure to the sensitive area will be included with the name of the area and the structure number. All structures along the transmission line corridor will be numbered at the time of construction.

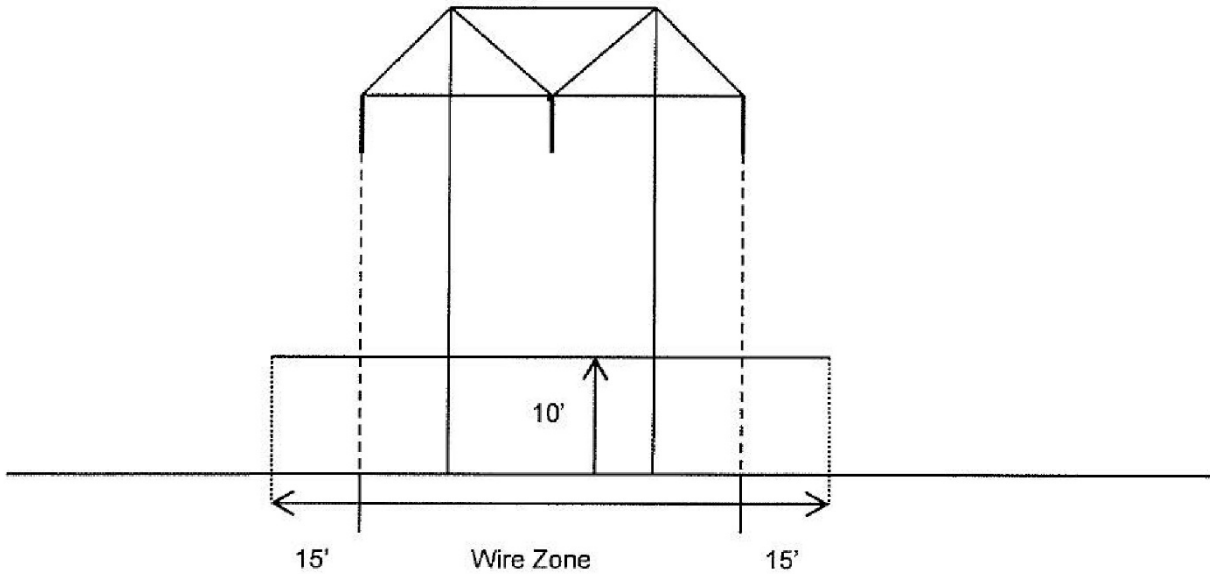
To aid in identifying restricted areas, buffers and restricted habitats will be located and demarcated in the field using brightly colored flagging or signage prior to the initiation of clearing and construction activities along the transmission line corridor. Alternatively, use of GIS data and GPS equipment may be used to provide accurate location of resources and associated buffers. If desired, personnel may permanently demarcate restricted habitats to aid in construction activities. Personnel working on the transmission line corridor will be provided a copy of this VCP. Use of the VCP in conjunction with the natural resource maps and Plan & Profile drawings will enable construction contractors to locate and mark restricted areas in the field.

11.0 Personnel Training

Personnel who will conduct vegetation clearing on the transmission line corridor will receive appropriate environmental training before being allowed access to the transmission line corridor. Construction and clearing personnel will be required to review this VCP prior to the training and before conducting any clearing or construction activities. The level of training will be dependent on the duties of the personnel. The training will be given prior to the start of clearing or construction activities. Replacement or new clearing or construction personnel that did not receive the initial training will receive similar training prior to performing any activities on the transmission line corridor.

The training session will consist of a review of the buffers and restricted habitats, the respective vegetation clearing requirements and restrictions for each, and a review of how these areas and resources can be located in the field. Training will include familiarization with and use of GIS information and sensitive natural resource identification in conjunction with the contents of this VCP, as well as basic causes, preventive and remedial measures for contamination, and erosion and sedimentation of water resources.

Figure 1



1. Capable species, regardless of height, are cut back to ground level or treated with herbicides within the entire length and width of the transmission line corridor during scheduled vegetation maintenance (every 4 years). However, within 25-foot wide stream buffers, only woody specimens over 10 feet tall may be cut or treated (specimens at or above this height are likely to grow into the conductor safety zone prior to the next scheduled vegetation maintenance cycle).
2. All woody vegetation over 10 feet in height and inside the wire zone, whether capable or non-capable, is cut back to ground level during scheduled vegetation maintenance.

Exhibit 10-2: CMP Post-Construction Vegetation Management Plan

Post-Construction Vegetation Maintenance Plan

Prepared by:

**Central Maine Power Company
83 Edison Drive
Augusta, Maine 04336**

June 2017



Introduction

This Post-Construction Vegetation Maintenance Plan (VMP) describes the restrictive maintenance requirements for protected natural resources within Central Maine Power Company's (CMP) transmission line corridors. The requirements described in this VMP apply to routine maintenance and are not intended to apply to emergency maintenance and/or repair actions.

The goal of the VMP is to provide maintenance personnel and contractors with a cohesive set of vegetation maintenance specifications for transmission line corridors. The VMP is intended to be used in conjunction with project As-Built Plan & Profile drawings to locate the areas where maintenance restrictions apply.

The protected natural resources subject to restrictive maintenance requirements include:

- Wetlands and streams;
- Perennial streams within designated Atlantic salmon (*Salmo salar*) habitat;
- Significant Vernal Pools (SVP);
- Inland Waterfowl and Wading Bird Habitat (IWWH);
- Deer Wintering Areas (DWA);
- Rare plant locations; and
- Locations over mapped significant sand and gravel aquifers.

In locations where individual restrictions or procedures overlap or multiple restrictions apply, the more stringent restrictions and all applicable procedures will be followed by maintenance personnel and contractors.

Right-of-Way Vegetation Maintenance Procedures

Typical Maintenance Procedures

Routine vegetation maintenance for transmission line corridors is intended to meet the following goals:

1. Maintain the integrity and functionality of the line
2. Maintain access in case of emergency repairs
3. Facilitate safety inspections.

Therefore, the objective of this VMP will be to control the growth of woody vegetation capable of encroaching into the Minimum Vegetation Clearance Distance (MVCD) of the transmission line to ensure the integrity and safe operation of the transmission line consistent with the

standards of North American Electric Reliability Corporation's (NERC) Transmission Vegetation Management¹. This will be accomplished by practicing an integrated vegetation management strategy using a combination of hand-cutting and selective herbicide applications. Mechanical mowing may be used in unusual circumstances to regain control of vegetation, should the typical procedures not suffice.

Throughout clearing and construction, shrub and herbaceous vegetation will remain in place to the extent possible. Removing large trees will be done during initial transmission line corridor clearing prior to construction of the new transmission line. Follow-up maintenance activities during operation of the line require the removal of "capable species," dead trees, and "hazard trees." Capable trees are those plant species and individual specimens that are capable of growing tall enough to violate the required clearance between the conductors and vegetation established by NERC. Due to the sag of the electric transmission lines between the poles, which varies with the distance between poles, tension on the wire, electrical load, air temperature and other variables, the required clearance is typically achieved by removing all capable species during each maintenance cycle. Removing capable species vegetation allows for the maintenance of 25 feet of separation between vegetation and the lines, thereby adhering to NERC standards. Hazard trees are those trees typically on the edge of the transmission line corridor that pose an imminent threat to violating the minimum separation standard or are at risk of contacting the lines themselves. Hazard trees are typically removed immediately upon identification.

More frequent vegetation management may be required within the first 3 to 4 years following construction in order to bring the vegetation under control. After this initial management period, maintenance practices are typically carried out on a 4-year cycle depending on growth, weather, geographic location, and corridor width. Maintenance may be required less frequently in the long-term as vegetation within the corridor becomes dominated by shrub and herbaceous species. Large branches that overhang the transmission line corridor and any hazard trees on the edge of, or outside of, the transmission line corridor that could contact the electrical lines or come within 15 feet of a conductor may be removed as soon as they are identified.

The following procedures will be implemented during vegetation maintenance activities to protect sensitive natural resources:

- Protected resources and their associated buffers will be flagged or located with a Global Positioning System (GPS) prior to all maintenance operations;
- Hand-cutting will be the preferred method of vegetation maintenance within buffers and sensitive areas, where reasonable and practicable;
- Equipment access through wetlands or over streams will be avoided as much as practicable by utilizing existing public or private access roads, with landowner approval where required;

¹ North American Electric Reliability Corporation Transmission Vegetation Management, Standard FAC 003 – 3 Technical Reference, July 1, 2014.

- Equipment access in upland areas with saturated soils will be minimized to the extent practicable to avoid rutting or other ground disturbance;
- Significant damage to wetland or stream bank vegetation, if any, will be repaired following completion of maintenance activities in the area; and
- Areas of significant soil disturbance will be stabilized and reseeded following completion of maintenance activity in the area.

Vegetation Maintenance Methods – All Transmission Line Corridor Areas

Mechanical Methods

During routine vegetation maintenance after construction, mechanical methods of maintaining the height of vegetation on the transmission line corridor will consist primarily of cutting with hand tools, with occasional use of chainsaws and limited use of motorized equipment in areas directly accessible from public or private access roads.

Maintenance procedures will be to cut all capable species and any dead or hazard trees at ground level except in designated buffer zones, as described below. Large vegetation cut during routine maintenance will be handled in accordance with the Maine Slash Law².

Herbicide Application

Herbicide application will be used in conjunction with the mechanical methods of vegetation maintenance. The herbicide application program is consistent with most New England utilities and consists of direct application to targeted species and specimens along the transmission line corridor with a low-volume foliar herbicide or application of herbicides to cut stumps and surfaces of larger trees. Direct application to individual plant species, as opposed to a broadcast spray, will control only the targeted woody vegetation allowing low-growing plant communities (the desired shrub and herbaceous species) to thrive. Selective herbicides will also be used to minimize the impacts to non-target species. Aerial application will not be used. Only herbicides which are registered with and approved by the U.S. Environmental Protection Agency (EPA-approved) and registered with the Maine Board of Pesticides Control (BPC) will be used.

Herbicide applications will likely begin the first year after construction is completed to gain control of vegetation growth. When control is achieved, treatment will typically occur on a 4-year cycle or as needed. By using selective herbicides and a variety of application methods, vegetation along the transmission line corridor will eventually consist of a dense, low-growing plant community that will discourage the establishment of tree species. Therefore, fewer woody species will require treatment in future applications.

2 12 MRSA §9331 et. Seq.

The following procedures will be implemented during herbicide applications:

- Herbicides will be used in strict accordance with the manufacturer's EPA-approved labeling and will not be applied directly to waterbodies or areas where surface water is present;
- Herbicides will not be applied within 25 feet of rivers, streams, brooks, lakes, ponds, or wetlands that have water present at the surface at the time of the application;
- Herbicides will not be mixed, transferred or stored within 100 feet of any wetland or surface water, unless done so on a public access road;
- Herbicides will not be mixed, transferred or stored within 100 feet of Significant Vernal Pool depressions;
- Herbicides will not be mixed, transferred or stored over mapped significant sand and gravel aquifers;
- Herbicides will not be applied, mixed, transferred or stored within 100 feet of any known private well or spring or within 200 feet of any known public water supply well;
- When herbicide applications are performed in wetlands without standing water, only herbicides approved for use in wetland environments will be used;
- Herbicides will not be applied to any area when it is raining or when wind speed exceeds 15 miles per hour as measured on-site at the time of application. When wind speeds are below 3 miles per hour, applicators should be aware whether a temperature inversion is present, and should consult the herbicide label to determine whether application should proceed under these conditions;
- The foreman or licensed applicator on each herbicide application crew will be licensed by the Maine BPC and will remain in eye contact and within earshot of all persons on his/her crew applying herbicides. At least one individual from any company applying herbicides must also hold a Commercial Master Applicator License issued by the BPC. This Master Applicator must have the ability to be on-site to assist persons applying herbicides within six hours driving time. If an out-of-state company is conducting the herbicide application, the company must have a Master Applicator in Maine during any application. Application of herbicides will be in accordance with applicable regulations promulgated under the Maine Pesticides Control Act, including those regulations to minimize drift, to maintain setbacks from sensitive areas during application, and to maintain setbacks from surface waters during the storing/mixing/loading of herbicides; and
- Herbicides will typically be mixed in a truck-mounted tank that remains on public access roads. Herbicide application is done by personnel with low-volume, hand-pressurized (manual) backpacks with appropriate nozzles, to minimize drift, who travel along the transmission line corridor by foot or by all-terrain vehicle and spot-treat target species and specimens.

The location of all streams, wetlands, significant vernal pools, rare plant locations, known wells, and mapped significant sand and gravel aquifers crossed by the transmission line corridor will be shown on the As-Built Plan & Profile drawings. GIS shapefiles will also be maintained with the location of these resources and will be provided to maintenance personnel. The presence of surface water will be determined prior to herbicide use in any wetland or waterbody. Crew leaders will assure that resources and buffers are clearly marked in the field, or that locations of resources and buffers are provided as GIS/GPS data prior to initiation of an herbicide application for clear identification by the applicators.

Vegetation Maintenance within Freshwater Wetlands

Transmission line corridor wetlands range in type from small, emergent wetlands formed in ruts from logging equipment to large forested wetland systems. No specific buffers are proposed for the wetlands identified within the transmission line corridor.

Additional Vegetation Maintenance Restrictions within and Adjacent to Freshwater Wetlands

Vegetation maintenance within, and within 25 feet of, freshwater wetlands with standing water will be conducted only by hand cutting with hand tools or chainsaws. Herbicide use is permitted in wetlands only when no standing water is present in the wetland at the time of the application. Herbicides will not be stored, mixed, transferred between containers, and no refueling of chain saws or other equipment will be allowed, within 100 feet of freshwater wetlands, unless done so on a public access road.

Vegetation Maintenance within Stream Buffers

A 25-foot buffer, as measured from the top of each bank, will be established for vegetation maintenance along streams within the transmission line corridor. Additional restrictions will be applied within 100 feet of streams. Special restrictions will apply within these stream buffers during vegetation maintenance.

This section describes the restrictions related to vegetation cutting and maintenance that will apply within these stream buffers. All vegetation maintenance procedures and restrictions that apply to typical transmission line corridor maintenance also apply within the stream buffers.

Additional Vegetation Maintenance Restrictions within Stream Buffers

The following additional restrictions apply to vegetation maintenance within stream buffers:

- Within that portion of the 25-foot stream buffer that is within the wire zone (i.e., within 15 feet, horizontally, of any conductor; (see Figure 1), all woody vegetation over 10 feet in height, whether capable or non-capable, will be cut back to ground level and resulting slash will be managed in accordance with

Maine Slash Law. No other vegetation, other than dead or hazard trees, will be removed;

- Removal of capable species, dead or hazard trees within the 25-foot buffer will be accomplished by hand-cutting only. Use of mechanized harvesting equipment is prohibited;
- Herbicides will not be applied within the 25-foot stream buffer;
- Herbicides will not be stored, mixed or transferred between containers within 100 feet of streams, unless done so on a public access road;
- No refueling or maintenance of equipment, including chain saws, will occur within 100 feet of streams, unless done so on a public access road; and
- No accumulation of slash will be left within 25 feet of the edge of any stream.

These additional restrictions will allow for taller vegetation within the 25-foot stream buffer to provide additional shading and reduce the warming effect of direct sunlight (insolation). Low ground cover vegetation will also remain to filter any sediment in surface runoff. The restrictions are also intended to minimize ground disturbance and prevent or minimize the surface transport of herbicides and petroleum products to streams. These restrictions will allow the stream buffers to provide functions and values similar to those provided prior to transmission line construction.

Vegetation Maintenance within Significant Vernal Pool Buffers

Vegetated buffers of 100 feet, as measured from the edge of the pool depression, will be established for SVPs crossed by the transmission line corridor. Vegetation maintenance within the SVP buffers will be subject to the same procedures and prohibitions, as applicable, which are required in the typical transmission line corridor, as well as to the additional measures below.

Additional Vegetation Maintenance Restrictions within Significant Vernal Pool Buffer

The following additional restrictions apply to vegetation maintenance within SVP buffers:

- Mechanized equipment will not be allowed within the vernal pool depression, unless the depression encompasses the entire width of the transmission line corridor. Mechanized equipment will only be allowed to cross the vernal pool depressions during frozen or dry conditions or with the use of mats;
- Between April 1 and June 30, no vegetation maintenance using tracked or wheeled equipment will be performed within the 100-foot buffer. Maintenance will be performed using only hand tools during this period;
- Between April 1 and June 30, no vegetation maintenance will occur within 25 feet of the SVP pool depression;
- No refueling or maintenance of equipment, including chain saws, will occur within 100 feet of SVP pool depression, unless done so on a public access road; and

- No herbicide use is permitted within 25 feet of the SVP pool depression.

Vegetation Maintenance within Inland Waterfowl and Wading Bird Habitat

Inland Waterfowl and Wading Bird Habitats (IWWH) are habitats mapped by the Maine Department of Inland Fisheries and Wildlife (MDIFW) that contain an inland wetland complex used by waterfowl and wading birds, plus a 250-foot nesting habitat area surrounding the wetland. The nesting habitat is considered to be part of the mapped IWWH. No additional buffers are proposed for IWWHs beyond this mapped habitat, and as such the vegetation maintenance restrictions apply to the mapped habitat only.

Vegetation maintenance within the IWWH will be subject to the same procedures and prohibitions, as applicable, which are required in the typical transmission line corridor and for stream buffers.

Additional Vegetation Maintenance Restrictions within Inland Waterfowl and Wading Bird Habitat

The following additional restrictions would apply to vegetation maintenance within mapped IWWH:

- Between April 15 and July 15, use of motorized vehicles (e.g., all-terrain vehicles) and mechanized equipment (e.g., chain saws or brush cutters) within IWWH is prohibited. Use of non-mechanized hand tools is allowed during this time period;
- No refueling or maintenance of equipment, including chain saws, will occur within the IWWH, unless done so on a public access road; and
- No herbicide use is permitted within 25 feet of any wetland within the mapped IWWH.

Vegetation Maintenance within Mapped Deer Wintering Areas

Deer Wintering Areas (DWA) provide important refuge for white-tailed deer (*Odocoileus virginianus*) during the winter months in northern climates and are typically characterized by an extensive stand of mature softwood species with a dense forest canopy.

No additional vegetation maintenance restrictions are proposed within mapped DWAs, as all capable species must be removed from these and other areas within the transmission line corridor in order to comply with NERC Transmission Vegetation Management standards.

Vegetation Maintenance within Rare Plant Locations

Vegetation maintenance of the transmission line corridor has the potential to impact rare plants and/or alter their habitat. The following additional vegetative maintenance restrictions will

minimize impacts to rare plants. The additional restrictions will apply only to the demarcated locations of the identified rare plants. No additional buffers will be established surrounding rare plant locations. These restrictions are intended to maintain existing hydrology and limit soil disturbance within rare plant locations.

Additional Vegetation Maintenance Restrictions within Rare Plant Locations

The following additional restrictions will apply to vegetation maintenance for the species listed above in the identified location:

- All capable tree species will be cut by hand (chainsaws, hand saws or axes). No other mechanized cutting equipment shall be used within these habitats;
- Unless rare plant locations encompasses the entire width of the transmission line corridor, mechanized equipment will only be allowed to cross rare plant locations during frozen conditions or with the use of mats;
- No refueling or maintenance of equipment, including chain saws, will occur within demarcated rare plant locations, unless done on a public access road; and
- No foliar herbicide use is permitted within the demarcated rare plant locations, however cut surface herbicides may be used on capable species and specimens.
- Crossing of rare plant locations with mechanized equipment:

All-Terrain Vehicles (ATVs)

- Due to small footprint, relatively light weight, and infrequency of use, ATV impact is minimal, therefore crane mats will not be used.
- If rare plants do not encompass entire ROW width, ATVs will avoid/travel around rare plants.
- If rare plants encompass entire ROW width:
 - ATVs will utilize existing rare plant travel path/crossing if one exists.
 - If no rare plant crossing exists, ATVs will cross at narrowest point of the rare plants, and will restrict this crossing to a single travel lane.

Heavy Equipment/Vehicles

- During emergency repair & maintenance work, crane mats will not be used. Heavy equipment/vehicles will utilize existing rare plant crossings if available.
- During planned repair & maintenance work:
 - If rare plants do not encompass entire ROW width, heavy equipment/vehicles will avoid/travel around rare plants. Crane mats will not be used.
 - If rare plants encompass entire ROW width, and there is an established travel path/crossing through the rare plants, heavy equipment/vehicles will utilize this crossing, and crane mats will not be used.

- If rare plants encompass entire ROW width, but there is no established travel path through the rare plants, heavy equipment/vehicles will cross rare plants using crane mats.

Maintenance Procedures for Mapped Significant Sand and Gravel Aquifers

Transmission lines located over mapped significant sand and gravel aquifers are subject to the typical transmission line corridor maintenance procedures, except that no refueling or maintenance of equipment, and no herbicides may be mixed, transferred or stored, over the mapped significant sand and gravel aquifers, unless done so on a public access road.

Locating and Marking Buffers and Habitats

A database will be maintained, including maps and GIS shapefiles, of the buffers, restricted habitats, and sensitive areas and their locations relative to the nearest structure (pole) or road location. The distance and direction from the nearest structure to the sensitive area will be included with the name of the area and the structure number. All structures along the transmission line corridor will be numbered at the time of construction.

To aid in identifying restricted areas, buffers and restricted habitats may be located and demarcated in the field using brightly colored flagging or signage prior to the initiation of maintenance activities along the transmission line corridor. Alternatively, use of GIS data and GPS equipment may be used to provide accurate location of resources and associated buffers during maintenance activities. If desired, maintenance personnel may permanently demarcate restricted habitats to aid in long-term maintenance activities. Maintenance contractors working on the transmission line corridor will be provided a copy of this VMP. Use of the VMP in conjunction with the As-Built Plan & Profile drawings will enable maintenance contractors to locate and mark restricted areas in the field.

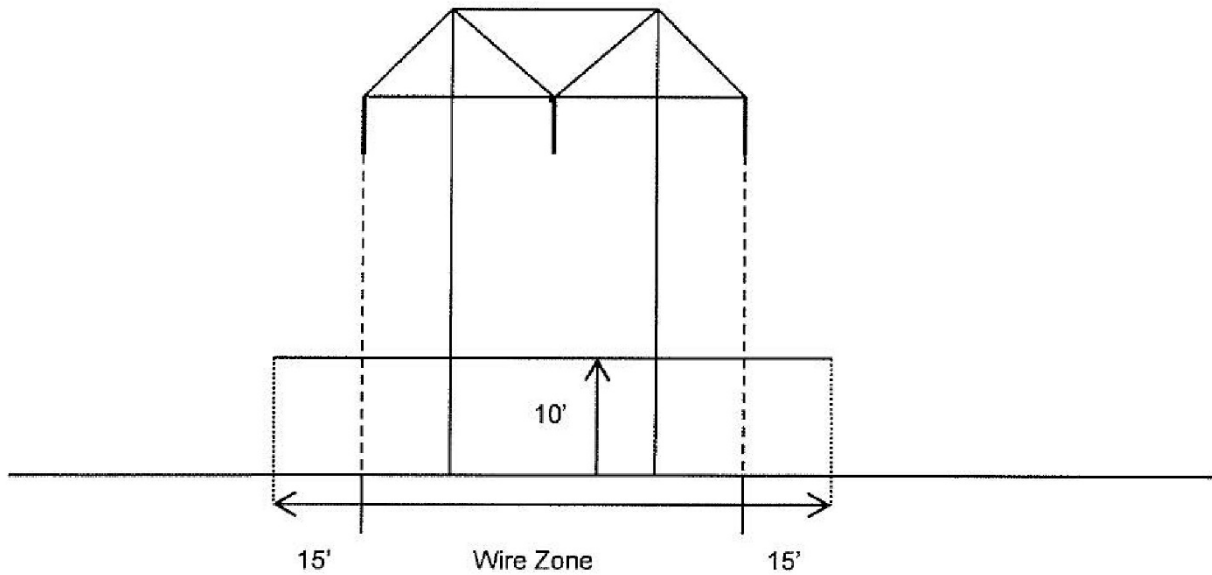
Maintenance Personnel Training

Personnel who will conduct vegetation maintenance activities on the transmission line corridor will receive appropriate environmental training before being allowed access to the transmission line corridor. Maintenance personnel will be required to review this VMP prior to the training and before conducting any maintenance activities. The level of training will be dependent on the duties of the personnel. The training will be given prior to the start of maintenance activities. Replacement or new maintenance personnel that did not receive the initial training will receive similar training prior to performing any maintenance activities on the transmission line corridor.

The training session will consist of a review of the buffers and restricted habitats, the respective maintenance requirements and restrictions for each, and a review of how these areas and resources can be located in the field. Training will include familiarization with and use of GIS information and sensitive natural resource identification in conjunction with the contents of this VMP, as well as basic causes, preventive and remedial measures for contamination, and erosion

and sedimentation of water resources. Training will also include a review of safety and the proper use of appropriate maintenance tools.

Figure 1



1. Capable species, regardless of height, are cut back to ground level or treated with herbicides within the entire length and width of the transmission line corridor during scheduled vegetation maintenance (every 4 years). However, within 25-foot wide stream buffers, only woody specimens over 10 feet tall may be cut or treated (specimens at or above this height are likely to grow into the conductor safety zone prior to the next scheduled vegetation maintenance cycle).
2. All woody vegetation over 10 feet in height and inside the wire zone, whether capable or non-capable, is cut back to ground level during scheduled vegetation maintenance.